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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Canceled)

2. (Canceled)

3. (Currently Amended) A multi-media terminal adapter for coupling to a network access module over a communication link, the network access module for communicating IP frames over a frame switched network, the multi-media terminal adapter comprising:

a wide area network interface coupled to the communication link for exchanging IP frames with the access module;

a local area network interface for receiving outbound data client IP frames from each of a plurality of data clients, each outbound data client IP frame comprising local socket information, the local socket information comprising:

a source address that includes a local area network IP address; and

a data client port number;

a VoIP module for generating outbound VoIP frames, each outbound VoIP frame comprising digital audio media and socket information that includes a VoIP port number selected from a first group of port numbers exclusively reserved for use by the VoIP module; and

a router module coupled between the wide area network interface and each of the VoIP module and the local area network interface, the router comprising:

means for receiving the outbound data client IP frames and the outbound VoIP frames;

means for performing port translation on the outbound data client IP

frames to generate translated outbound data client IP frames, each translated outbound data client IP frame comprising payload from the outbound data client IP frame and global socket information comprising a global IP address of the multi-media terminal adapter and a translated port number selected from a second group of port numbers, the second group of port numbers being mutually exclusive of the first group of port numbers and exclusively reserved for port translation of outbound data client IP frames;

means for providing the outbound VoIP frames and the translated outbound data client IP frames to the wide area network interface;

~~The multi-media terminal adapter of claim 2, wherein the router module further comprises:~~

a translation table storing each translated port number in association with the local area network IP address and the data client port number associated therewith;

means for receiving inbound IP frames, each inbound IP frame being addressed to the global IP address and including a destination port number;

means for routing the inbound IP frame to the VoIP client if the destination port number is within the first group of port numbers; and

means for generating a reverse translated IP frame if the destination port number is within the second group of port numbers, the reverse translated frame comprising payload from the inbound IP frame and including a destination address comprising the local area network IP address and the data client port number, that associated with the translated port number, replacing the global IP address and the destination port number from the inbound frame respectively; and

wherein the VoIP module further includes a call set up module for establishing inbound VoIP communication channels by providing a remote VoIP device with the global IP address and an inbound VoIP port number selected from the first group of port numbers

4. (Original) The multi-media terminal adapter of claim 3, wherein:

the socket information of each outbound VoIP frame generated by the VoIP module further includes a source IP address which comprises the global IP address of the multi-media terminal adapter; and

the router module further comprises means for routing the outbound VoIP frame generated by the VoIP module utilizing the source IP address and source port number assigned by the VoIP module.

5. (Original) The multi-media terminal adapter of claim 4, wherein:

the router module further comprises means for routing the inbound IP frame to a signaling module of the VoIP module if the destination port number is within a third group of port numbers, the third group of port numbers being:

mutually exclusive of the first group of port numbers and the second group of port numbers; and

exclusively reserved for VoIP session signaling frames.

6. (Original) The multi-media terminal adapter of claim 5, further comprising:

a PSTN driver for generating subscriber loop signaling and PSTN media communications; and

an audio DSP for coupling between the PSTN driver and the VoIP client and for converting between:

PSTN audio media and the digital audio media; and

PSTN in band signaling and digital signaling.

7. (Original) The multi-media terminal adapter of claim 6, further comprising a DHCP server for assigning the local area network address to each data client.

8. (Original) The multi-media terminal adapter of claim 3, wherein:

the socket information of each outbound VoIP frame generated by the VoIP module further includes a source IP address which comprises an IP address that is

different from the global IP address; and

the router module further comprises means for translating only the IP address of each outbound VoIP frame prior to providing the outbound VoIP frame to the wide area network interface and routing a translated outbound VoIP frame utilizing the global IP address of the multi-media terminal adapter an the source port number assigned by the VoIP module.

9. (Original) The multi-media terminal adapter of claim 8, wherein:

the router module further comprises means for routing the inbound IP frame to a signaling module of the VoIP module if the destination port number is within a third group of port numbers, the third group of port numbers being:

mutually exclusive of the first group of port numbers and the second group of port numbers; and

exclusively reserved for VoIP session signaling frames.

10. (Original) The multi-media terminal adapter of claim 9, further comprising:

a PSTN driver for generating subscriber loop signaling and PSTN media communications; and

an audio DSP for coupling between the PSTN driver and the VoIP client and for converting between:

PSTN audio media and the digital audio media; and

PSTN in band signaling and digital signaling.

11. (Original) The multi-media terminal adapter of claim 10, further comprising a DHCP server for assigning the local area network address to each data client.

12. (Original) The multi-media terminal adapter of claim 3, further comprising:

a bandwidth management module coupled between the VoIP client and the wide area network interface for providing bandwidth management instructions to the access module and receiving acknowledgement messages from the access

module; and

each bandwidth management instruction commanding the access module to establish a time division logical channel over the frame switched network for supporting the exchange of IP frames between the multi-media terminal adapter and a remote VoIP endpoint.

13. (Original) The multi-media terminal adapter of claim 12, wherein the instruction to establish a time division logical channel comprises a discrimination identifier identifying a characteristic of the IP frames to which the time division logical channel will apply, the identifier being the VoIP port number from the first group of port numbers.

14. (Canceled)

15. (Canceled)

16. (Currently Amended) A method of sharing a single connection to an access module, that is coupled to a frame switched network, amongst a VoIP client and a plurality of data clients coupled to a local area network, the method comprising:

receiving outbound data client IP frames from each of the plurality of data clients, each outbound data client IP frame comprising local socket information that includes a local area network IP address and a data client port number;

generating outbound VoIP frames, each outbound VoIP frame comprising:

digital audio data payload representing a portion of an audio session; and

socket information that includes a VoIP port number selected from a first group of port numbers exclusively reserved for use by the VoIP module;

performing port translation on the outbound data client IP frames to generate translated outbound data client IP frames, each translated outbound data client IP frame comprising payload from the outbound data client IP frame and

global socket information comprising a global IP address of the multi-media terminal adapter and a translated port number selected from a second group of port numbers that is:

mutually exclusive of the first group of port numbers; and

exclusively reserved for port translation of outbound data client IP frames;

providing the outbound VoIP frames and the translated outbound data client IP frames to the access module;

establishing inbound VoIP communication channels by providing a remote VoIP device with the global IP address and an inbound VoIP port number selected from the first group of port numbers; and

~~The method of claim 15,~~ wherein:

wherein the step of performing port translation on the outbound data client IP frames comprises storing each translated port number in association with the local area network IP address and the data client port number in a translation table; and

the method further comprises:

receiving inbound IP frames, each inbound IP frame being addressed to the global IP address and including a destination port number;

routing the inbound IP frame to the VoIP client if the destination port number is within the first group of port numbers; and

generating a reverse translated IP frame if the destination port number is within the second group of port numbers, the reverse translated frame comprising payload from the inbound IP frame and including a destination address comprising the local area network IP address and the data client port number, that associated with the translated port number, replacing the global IP address and the destination port number from the inbound frame respectively.

17. (Original) The method of claim 16, wherein:

the socket information of each outbound VoIP frame further includes a

source IP address which comprises the global IP address of the multi-media terminal adapter assigned by a VoIP module; and

the method further comprises routing the outbound VoIP frame generated by the VoIP module utilizing the source IP address and source port number assigned by the VoIP module.

18. (Original) The method of claim 17, wherein:

routing the inbound IP frame to a signaling module of the VoIP module if the destination port number is within a third group of port numbers, the third group of port numbers being:

mutually exclusive of the first group of port numbers and the second group of port numbers; and

exclusively reserved for VoIP session signaling frames.

19. (Original) The method of claim 18, further comprising:

generating PSTN media communications for driving a remote PSTN device; and converting between:

PSTN audio media and the digital audio media of outbound VoIP frames; and

digital audio media of inbound VoIP frames and PSTN audio media.

20. (Original) The method of claim 19, further comprising assigning the local area network address to each data client.

21. (Original) The method of claim 16, wherein:

the socket information of each outbound VoIP frame generated by the VoIP module further includes a source IP address which comprises an IP address that is different from the global IP address; and

the method further comprises translating only the IP address of each outbound VoIP frame prior to providing the outbound VoIP frame to the access

module and routing a translated outbound VoIP frame utilizing the global IP address of the multi-media terminal adapter and the source port number assigned by the VoIP module to the access module.

22. (Original) The method of claim 21, wherein:

routing the inbound IP frame to a signaling module of the VoIP module if the destination port number is within a third group of port numbers, the third group of port numbers being:

mutually exclusive of the first group of port numbers and the second group of port numbers; and

exclusively reserved for VoIP session signaling frames.

23. (Original) The method of claim 22, further comprising:

generating PSTN media communications for driving a remote PSTN device; and converting between:

PSTN audio media and the digital audio media of outbound VoIP frames; and

digital audio media of inbound VoIP frames and PSTN audio media.

24. (Original) The method of claim 23, further comprising assigning the local area network address to each data client.

25. (Original) The method of claim 16, further comprising:

providing bandwidth management instructions to the access module and receiving acknowledgement messages from the access module; and

each bandwidth management instruction commanding the access module to establish a time division logical channel over the frame switched network for supporting the exchange of IP frames between the multi-media terminal adapter and a remote VoIP endpoint.

26. (Original) The method of claim 25, wherein the instruction to establish a time division logical channel comprises a discrimination identifier identifying a characteristic of the IP frames to which the time division logical channel will apply, the identifier being the VoIP port number from the first group of port numbers.